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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/598,371

05/23/2008

Tetsuo Nagano

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EXAMINER

DENTZ, BERNARD I

ART UNIT

PAPER NUMBER

1625

NOTIFICATION DATE

DELIVERY MODE

04/30/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

gbpatent@gbpatent.com  
pto@gbpatent.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/598,371	<b>Applicant(s)</b> NAGANO ET AL.	
	<b>Examiner</b> Bernard Dentz	<b>Art Unit</b> 1625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>10-1-2009, 4-7-2010</u> . | 6) <input type="checkbox"/> Other: ____.  |

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The previous action of 3-12-2010 is vacated. See the reasons in applicants' account of the telephonic interview which took place on 3-22-2010

Claim 6 is rejected under 35 U.S.C. 102(b) as being anticipated by Sony, Japanese Patent Pub. 60-025195.

An English translation of Japanese Patent Publication 60-025195, the Chem. Abstract of which was previously supplied, is now supplied.

The dye compound where instant R3 is ethyl is taught in the formula at p. 5.

The text description renders it possible that the ethyl ester is intended rather than the ethyl group.

Even in this case, if the term "carboxy" group in the claims is given its narrow interpretation, claim 6 is anticipated.

Claims 5, and 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sony. These claims require an extra substituent on the 9-phenyl moiety. Simple methyl substituents would represent obvious homologs.

Claims 6-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Lam et al, US Patent 7,491,830 of effective US filing date of 5-9-2003 which is the date that Provisional Application 60/469,031 was filed. It discloses a series of rhodamine dyes in which the 9-phenyl substituent preferably contains a halogen, alkoxy and/or haloalkyl substituent at at least one of the ortho-positions.

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Substitution by 2-substituents, i.e. one at each ortho-position is preferred. See col. 2, line 1 to col. 3, line 61.

See dyes 3,7,10 and 77 e.g.

Claims 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lam et al. Lam et al also teaches alkyl as one of the above substituents on the ortho-position of the 9-phenyl ring rendering obvious applicants' cpds. where R22 is alkyl and R21 is alkyl or alkoxy. See claim 6 .

Claims 5 and 8-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Agnew et al, US Patent 7,101,005. It teaches compounds which fluoresce when bound to metals. See The Abstract and col. 5, line 64 to col. 6 line, line 53. Xanthene compounds are taught at col. 16. See Working Example 41 for the synthesis of compound 19, wherein instant R3 is methoxy, which meets the above claims.

Claims 5 and 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agnew et al. Metal chelating groups other than that in the above compounds are suggested by the reference and meet "a substituent for trapping a metal ion" as in claim 8. See cpds. 5 and 16 in Table 2 which represent an Ex. of instant cpds. where fusion of one or more set of the instant variables R4 to R11 occurs. Rhodamine type compounds which also contain a metal chelating group are preferred. See col. 31, first complete paragraph.

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Claims 5, 8, 9 and 10 are rejected under 35 U.S.C. 102(a or e) as being anticipated by Martin et al, US Patent 6,962,992. It discloses crown ethers for the instant utility. See col.1 and 2. Rhodamine based compounds having substituents on the 9-phenyl moiety which are fused to said phenyl moiety in the meta-para position and also containing an ortho-substituent are disclosed as cpd. 152 at col. 15 and the first 3 compounds at col. 17. This meets the instant recitation that "R1 and R2 may combine to each other to form a ring structure for trapping a metal ion". See also Ex. 33-42, 55 and 56 compounds meeting the instant claims.

Claims 5 and 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al. Modification of the ortho substituent in the 9-phenyl group is suggested by the variation of said group in Ex. 33-56.

Further compounds having ring fusion formation of instant R4-R11 is suggested by Ex. 25 and 26.

The following is a quotation of the second paragraph of 35 U.S.C.

112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The language in par. (1) and (2) at the end of claim 1 starting with "imparts a substantially high electron density" etc. is unduly functional, setting out the goal of the invention which is to provide a non-fluorescent compound which after coming in contact (i.e. trapping) with a

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metal ion fluoresces. The language in claim 5 wherein the fluorescence occurs after contact with an active oxygen species selected from nitric oxide, hydroxyl radical, singlet oxygen, or superoxide is also unduly functional.

That applicants recite that the combination of substituents R1, R2 and R3 imparts a substantially high electron density to the benzene ring to which they are bound before trapping and substantially reduce the electron density after trapping does not remedy the undue functionality problem. For example can one of ordinary skill in the art determine what substituents would meet this requirement?

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bernard Dentz whose telephone number is 571-272-0683. The examiner can normally be reached on Mon-Fri from 8 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet Andres, can be reached on 571 272-0867. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://portal.uspto.gov/external/portal>. Should you have questions on access to

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the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/ Bernard Dentz/

Primary Examiner, Art Unit 1625